

NE 181st Avenue Draft Traffic Capacity Study Executive Summary (Corrected)

Executive Summary

Background Information

NE 181st Avenue provides the only connection to the Interstate-84 freeway within Gresham city limits. As the areas to the south develop, including Pleasant Valley and Damascus, this corridor will grow more congested because it provides the nearest freeway access. The redevelopment potential of the Wilkes East and North Gresham neighborhoods, including the Industrial portion of the Rockwood Urban Renewal District, will be hampered as the NE 181st Avenue intersections near the freeway reach capacity.

This study is in response to the 2007 Rockwood-West Gresham Urban Renewal Industrial Opportunity Study, which recommended that a traffic study be done for the NE 181st Avenue corridor between NE Sandy Boulevard and NE Halsey Street to determine the existing conditions and to evaluate and prioritize improvement projects. Existing conditions (year 2007) and future conditions (year 2027) were assessed.

Corridor Improvement Alternatives

The study evaluated four main future alternatives:

Alt 0 - No action

Alt 1 - Sydney Coordinated Adaptive Traffic System (SCATS) adaptive signal control at the six study intersections

Alt 2 - Widening NE 181st to three lanes in each direction between the freeway and south of NE Halsey Street

Alt 3 - Installing a reversible center lane between the freeway and south of NE Halsey Street that would operate three lanes northbound during the a.m. peak and three lanes southbound during the rest of the day. Left turns would be prohibited from NE 181st Avenue at the NE San Rafael Street and NE Halsey Street with this alternative.

With additional improvements, all four future alternatives studied in this report will provide acceptable intersection and corridor performance. However, the added capacity brought by the improvements of Alt 2 and Alt 3 would attract additional trips to the corridor, partially negating the performance gains.

Alt 1, which would add SCATS at the six study intersections, would provide performance that would meet City of Gresham standards, assuming its performance improvements are as effective as those on the Burnside Road corridor[†] and additional intersection improvements are done. Alt 1, with additional intersection improvements, performs as well or better than more expensive corridor widening and reversible-lane projects, partially because the widening projects would attract additional traffic from parallel routes. Added benefits of the SCATS signal system include the ability to adapt to the high-volume shift changes at the Boeing and US Bancorp facilities during all times of the day. Alt 1 was by far the most cost-effective corridor alternative studied.

[†] Independent analysis has shown that the SCATS system on the Burnside corridor has resulted in a minimum 10% improvement in corridor travel time and a corresponding minimum 10% increase in effective intersection capacity.

Some TIF Projects Should Proceed as Planned

Two of the City's Transportation Impact Fee (TIF) projects that are planned for the corridor are required for the study intersections to meet City performance standards in the future. These projects are:

- 515200 The 181st at Halsey TIF project would add dual northbound and southbound left-turn pockets, as well as eastbound, westbound, and southbound right-turn pockets. This project is necessary for future operations. (Project cost estimate \$919,000)
- 521200 The Sandy Intersection Improvements TIF project would widen the intersection to add dual westbound left-turn lanes and a northbound right-turn pocket. The project should be modified to add dual northbound left-turn lanes. The northbound right-turn pocket is not needed for adequate intersection operation during the corridor a.m. and p.m. peaks, however, although further study on the intersection performance during the period before shift changes at the Boeing facility should be considered before that right-turn pocket is removed from the planned design. (Project cost estimate is \$576,000, although that does not include the added northbound dual left turn.)

Additional Intersection Improvements Projects Will Be Needed by 2026

Recommended projects not part of the City's current TIF project list include signal phasing modifications at the US Bank (3000 Block) intersection. This project would add protected-permitted left-turn phasing on the driveway side streets, which will eventually be needed to provide adequate performance during the peak exit times from the businesses these driveways serve.

Signal phase changes at the San Rafael intersection should be considered immediately to improve the corridor throughput and westbound right-turn performance:

- The current prohibition on westbound right turns on red should be removed at the San Rafael intersection. To do this, the southbound U turn must be prohibited.
- The prohibition of U turns will require additional signage within the service businesses west of 181st which would direct traffic bound for Interstate 84 to use NE 178th Avenue and San Rafael to return to 181st northbound. The wide pavement on San Rafael Street east of the 181st Avenue intersection may also allow for an unsignalized U turn pocket to be constructed to provide an easy return to northbound 181st.
- The westbound crosswalk (over the north leg of the intersection) should be closed.

Several TIF Projects Will Not Be Needed

None of the other TIF projects that are planned for the NE 181st Avenue corridor would be needed to ensure future performance through to 2027, assuming SCATS is installed and performs as predicted. These projects include:

- 515100 This unfunded TIF project would widen NE 181st Avenue between the I-84 freeway eastbound ramps and Halsey. Its additional capacity would attract new trips, which would partially offset the performance gains on the corridor. The viability of the project is limited by the difficulty in acquiring the right of way on the west side of 181st. (Project cost estimate \$3,373,000)
- 516600 The analysis showed that this unfunded TIF, which would reconstruct the eastbound I-84 ramps intersection to eliminate the southbound left-turn phase and replace it with an uncontrolled partial cloverleaf, isn't required within the 2027 time period. (Project cost estimate \$5,746,000)

521300 This unfunded TIF project would add a southbound lane to NE 181st Avenue between the US Bank driveway intersection and the I-84 westbound ramps intersection. The added capacity it would provide is not needed to ensure adequate corridor performance. (Project cost estimate \$3,369,000)

Urban Renewal Improvement Projects

Most of the Urban Renewal projects that were reviewed in the report are intended to make the area more attractive to industrial redevelopment but will have minimal impact to the performance of the 181st corridor:

- The new connection between Wilkes and San Rafael, near what would be NE 186th Avenue, would shorten the travel distance from 181st and Wilkes and the former Firestone property on Wilkes by more than half, from 7,300 feet to 3,500 feet. This would make redevelopment of the entire area more likely, but it would not directly impact the performance of the 181st corridor.
- Similarly, the Urban Renewal projects that would rebuild San Rafael and 192nd to collector standards would have little or no impact to the 181st Avenue corridor performance.

A full or improved connection between NE Wilkes Road and NE 181st Avenue would not be permitted by ODOT. The future modeling of a proposed off-ramp to Wilkes from the I-84 eastbound onramp shows that it would attract cut-through traffic during the p.m. peak commute.

Recommendations

Recommend proceeding with Alt 1, the SCATS adaptive signal control system installation at the six study intersections (expanded to include a seventh intersection at NE 181st Avenue and NE Glisan Street). Modify the San Rafael intersection to remove the prohibition on westbound right turns on red, remove permission for the southbound U turn, and to close the crosswalk over the north leg of the intersection.

Program 181st at Halsey TIF (515200, which would add dual northbound and southbound left-turn pockets and eastbound, westbound, and southbound right-turn pockets), and the Sandy Intersection Improvements TIF (521200, which would add dual westbound left-turn lanes and a northbound right-turn pocket, but needs to be modified to add dual northbound left-turn lanes) in the Capital Improvement Program within the next 10 years. Add a project to modify the traffic signal at the US Bancorp driveway intersection to the unfunded TIF list.

Remove 181st Avenue (I-84 to Halsey) TIF (515100), 181st at I-84 TIF (516600), and 181st Avenue (I-84 to US Bancorp) TIF (521300) from the next update of the TIF project list. Dropping these three projects will remove an estimated \$12,488,000 in costs from the unfunded TIF list.